On hybridisation of Indian and House Sparrows

by E. I. Gavrilov

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I consider that the Indian (*Passer indicus* Jard. et Selby) and the House (*P. domesticus* L.) Sparrows are separate species, which are characterized not only by essential differences in biology and by some overlap of their ranges, but also by distinct morphological differences (Gavrilov & Korelov, in press). These last are: (1) cheek colour, (2) "speculum" colour, (3) wing structure, (4) colour of claws and of quills of the under tail-coverts and (5) weight. Based on these differences we found 7 birds in a series of 110 sparrows, which presented in different combinations the morphological character of both species. Some sparrows had wings as in *P. domesticus* and the cheek coloration of the Indian species, while in others the reverse was found. All specimens were obtained in the Djambul region, where both species are resident. Comparing the sizes and the weights of these birds with the same characters in Indian and House Sparrows (Table) the only conclusion one can draw is that 7 sparrows judged on size, weight and colour are intermediate between the Indian and the House Sparrows and they are therefore probably hybrids. Specimens showing the intermediate characters of Indian and House Sparrows were also obtained by N. A. Zarudny (1896).

Table

Size and weight of Indian and House Sparrows and their hybrids

Measurements in mm. and gr.	Species and hybrids	Min	Max	Mean	No. measured
Total length	*P. indicus*	152	170	159·6	62
	P. indicus x *P. domesticus*	155	168	161·8	5
	P. domesticus	159	170	163·7	23
Wing length	*P. indicus*	72	83	76·8	70
	P. indicus x *P. domesticus*	73	79	76·4	7
	P. domesticus	75	83	78·6	33
Bill length	*P. indicus*	8·0	9·4	8·9	40
	P. indicus x *P. domesticus*	8·8	9·2	9·0	7
	P. domesticus	8·8	10·2	9·4	28
Bill depth	*P. indicus*	6·4	7·7	7·3	40
	P. indicus x *P. domesticus*	7·2	8·0	7·4	7
	P. domesticus	7·1	8·1	7·6	28
Weight	*P. indicus*	22·5	28·5	24·8	70
	P. indicus x *P. domesticus*	25·5	28·5	26·4	7
	P. domesticus	25·5	31·7	28·3	32

There are two different opinions. Some authors consider the hybridisation of these sparrows to be very rare (Dolgushin, 1948), while it is disclaimed by others (Sudilovskaya, 1957). Our data on the biology of these birds in their common distribution show that though in general the House Sparrow starts to nest considerably earlier than the Indian species, part of the population commences to breed simultaneously with Indian Sparrows. This is the case with the birds of one year old and when the first clutch is lost. Moreover these species may live side by side and often they build in the same trees. The above facts suggest that hybridisation

between these closely related species, although rather rare is nevertheless not unknown.

The very high viability and reproductive activity of sparrows leads to some curious cases. N. A. Zarudny (1896) mentioned a pair of birds consisting of male *Passer indicus* and female of *Emberiza bruniceps*. The interesting details of this unique finding are given by the author who made observations in a hide a hundred yards from the nest using a pair of field-glasses. At first the bunting arrived and slipped into the nest. About ten minutes later the sparrow arrived with a green caterpillar which he gave to the hen. It next appeard some minutes later with a long straw and began to put the straw between small twigs hanging over the nest. Having finished this work it flew off and the bunting came out of its nest and pushed the straw off to the ground. This was repeated a few times; the sparrow probably desired to build a roof to the nest as is customary in this species, but the bunting did not like this because it was accustomed to seeing above its head a blue sky though through a thicket of a bush, and it was in consequence determined to destroy the roof.

"... I found two eggs in the nest already, one of which ... I took. After four days I visited the nest again. There were now three eggs in the nest above which the sparrow, in spite of the protests of the hen was set on building the prominent roof ... Near the nest, on the ground and in the grass there was plenty of straw, feathers and down; they probably had been brought by the sparrow but were rejected by the hen—the bunting." (Zarudny, 1896, pp. 251–252).

It is appropriate to note a fact supporting the specific distinction of the Indian Sparrow. House Sparrow hybridises with Spanish Sparrow very easily. There is a hybrid population of these birds in North Africa, in Italy and in Mediterranean islands, where about 15 subspecies have been described in hybrids. *Passer domesticus italiae* Vieill., which is a subspecies of hybrid origin*) occurs throughout Italy where the parent forms are absent (Meise, 1936; Bachkiroff, 1953). But hybrids between the Indian and Spanish Sparrow are very rare, though in Southern Kazakhstan both forms are migratory and arrive in spring almost at the same time and are found rather often nesting in the same forest plantations. N. A. Zarudny (1910) writes on 3 hybrids of Indian and Spanish Sparrows obtained in the autumn of 1902 near Narynkol and in spring and summer of 1909 near Tashkent. A hybrid male of these species was found in Tadjikistan, where a pair consisting of male *P. hispaniolensis* and a female *P. indicus* was observed also in the nesting colony of Indian Sparrows situated on a precipice (Golovanova & Popov, 1962).

It should be noted finally that physiological isolation as a specific criterion must be approached in different ways in each separate race. The lack of hybridisation between different forms of birds undoubtedly denotes their specific distinctness, but the presence of hybrid does not necessarily show as yet that they belong to the same species. First of all the hybrids may be infertile or they may bear progeny which is infertile. The limited fecundity of hybrids also indicates that a differentiation of birds has occurred. But fertile hybrids bearing quite fertile progeny is not

* There is another point of view: J. M. Harrison (1961) considers that *P. d. italiae* is an intermediate stage of evolution of *P. domesticus* from *hispaniolensis*.

unquestionable evidence that they belong to different forms of the same species. The fact is that the simplicity of structure of birds' reproductive organs considerably facilitates interbreeding and hybrids not only at the level of the species but also at the level of the genus can be found repeatedly in nature and in captivity; the hybridisation often occurs even in higher taxa than that of the genus (Dementiev, 1940). Since it is natural that two closely related species that have diverged only in recent times will interbreed where the isolating mechanisms have been ineffective (such as asynchronism of breeding, behaviour, voice, coloration, chromosome incompatability and so on). Hybrids can therefore be used for revealing the affinities of closely related species, but for establishing the same species other and wider criteria should also be used, ecological, morphological, geographical and so on.

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An albino brood of *Pycnonotus barbatus* (Desfontaines)

by R. K. Brooke

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In November, 1964 a nest of this bulbul was found near Marandellas in a garden of an aviculturalist. It contained three young whose emerging feathers were white instead of dark grey-brown. He moved the nest into a cage and so placed it that the parents could continue to feed the young which they did. The young died in February, 1965 for no very obvious reason: two were apparently injected with formalin and given to Mr. J. S. Mills of Salisbury who gave them to me. They are now in the National Museum, Bulawayo. The third albino youngster is no longer available,